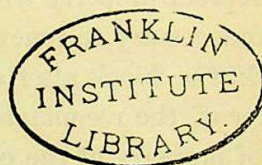


A.D. 1869, 19<sup>th</sup> JULY. N° 2182.

Blowing Glass.



LETTERS PATENT to Jean Baptiste Fondu, of Braine-le-Comte, in the Kingdom of Belgium, Engineer, for the Invention of "A NEW AND IMPROVED PROCESS AND COMPOUND FOR BLOWING GLASS AND FOR THE APPARATUS CONNECTED THEREWITH."

Scaled the 1st January 1870, and dated the 19th July 1869.

PROVISIONAL SPECIFICATION left by the said Jean Baptiste Fondu at the Office of the Commissioners of Patents, with his Petition, on the 19th July 1869.

I, JEAN BAPTISTE FONDU, of Braine-le-Comte, in the Kingdom of  
5 Belgium, Engineer, do hereby declare the nature of the said Invention for "A NEW AND IMPROVED PROCESS AND COMPOUND FOR BLOWING GLASS AND FOR THE APPARATUS CONNECTED THEREWITH," to be as follows:—

My Invention consists in the combination, for the purpose of blowing glass, of a metallic block and a new and improved compound which  
10 serves to cover the interior surfaces of the block so as to prevent the glass from coming in contact with the metal.

The block is a piece of metal of a size more or less great, with a sloping curvilinear hollow in which the melted glass is poured, and a very thick

*Fondu's Improved Process for Blowing Glass.*

bottom; it is placed over a receptacle filled with beer or greasy water by an axis turning in bearings on the edge of the sides of said receptacle in such a manner as to be able to oscillate and to be dipped in the liquid of the receptacle or raised out of it by a lever having a counterweight on its exterior end and the other end fixed to the moveable axis of the 5 said block.

The compound is formed of 85 per cent. of charcoal, 14 per cent. of pitch, and 1 per cent. of incense, all being ground and compounded with beer so as to form a paste of such a thickness that it can be laid over the interior surface of the hollow of the block before the glass runs into 10 it and is blown. The beer forming part of the compound imparts to it a fireproof property when under the intense heat of the glass and renders it unnecessary to renew the laying on of the paste during an entire day's work, the block after each operation being dipped in the beer or greasy water of the receptacle which cleans the hollow and maintains the fire- 15 proof property of the covering of the compound.

**SPECIFICATION** in pursuance of the conditions of the Letters Patent, filed by the said Jean Baptiste Fondu in the Great Seal Patent Office on the 1st January 1870.

**TO ALL TO WHOM THESE PRESENTS SHALL COME, I, JEAN 20** BAPTISTE FONDU, of Braine-le-Comte, in the Kingdom of Belgium, Engineer, send greeting.

**WHEREAS** Her most Excellent Majesty Queen Victoria, by Her Letters Patent, bearing date the Nineteenth day of July, in the year of our Lord One thousand eight hundred and sixty-nine, in the thirty- 25 third year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said Jean Baptiste Fondu, Her special licence, that I, the said Jean Baptiste Fondu, my executors, administrators, and assigns, or such others as I, the said Jean Baptiste Fondu, my executors, administrators, and assigns, should at any time agree with, and no 30 others, from time to time and at all times thereafter during the term therein expressed, should and lawfully might make, use, exercise, and vend, within the United Kingdom of Great Britain and Ireland, the Channel Islands, and Isle of Man, an Invention for "A NEW AND IMPROVED PROCESS AND COMPOUND FOR BLOWING GLASS AND FOR THE APPARATUS 35

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CONNECTED THEREWITH," upon the condition (amongst others) that I, the said Jean Baptiste Fondu, my executors or administrators, by an instrument in writing under my, or their, or one of their hands and seals, should particularly describe and ascertain the nature of the said  
5 Invention, and in what manner the same was to be performed, and cause the same to be filed in the Great Seal Patent Office within six calendar months next and immediately after the date of the said Letters Patent.

NOW KNOW YE, that I, the said Jean Baptiste Fondu, do hereby  
10 declare the nature of my said Invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

My Invention consists in the combination, for the purpose of blowing glass, of a metallic block and a new and improved compound which  
15 serves to cover the interior surfaces of the block so as to prevent the glass from coming in contact with the metal.

The block is a piece of metal of a size more or less great, with a sloping curvilinear hollow in which the melted glass is poured, and a very thick bottom; it is placed over a receptacle filled with beer or greasy water  
20 by an axis turning in bearings on the edge of the sides of said receptacle in such a manner as to be able to oscillate and to be dipped in the liquid of the receptacle or raised out of it by a lever having a counterweight on its exterior end, and the other end fixed to the moveable axis of the said block.

The compound is formed of 85 per cent. of charcoal, 14 per cent. of pitch, and 1 per cent. of incense, all being ground and compounded with beer so as to form a paste of such a thickness that it can be laid over the interior surface of the hollow of the block before the glass runs into it and is blown. The beer forming part of the compound imparts  
30 to it a fireproof property when under the intense heat of the glass and renders it unnecessary to renew the laying on of the paste during an entire day's work, the block after each operation being dipped in the beer or greasy water of the receptacle which cleans the hollow and maintains the fireproof property of the covering of the compound.

35 Having thus briefly described the nature of the said Invention, I will now proceed to describe the same more fully, reference being had to the accompanying Drawings for that which concerns the apparatus connected with my Invention.

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In these Drawings Fig. 1 is a section in elevation by A, B, Fig. 2; and Fig. 2 a plan or top view of the apparatus.

A is the sheet iron receptacle for the liquid surrounding the concave part of the block; B, the rivetted cast-iron bottom of the same; C, the metal block represented in the position for placing the glass and 5 operating the blowing process; D, the lever for moving the block in order to dip it in the liquid, and which is jointed on the axis 1 and 2 mounted on the bearings M, N; this lever can be stopped in its movement by means of the hook E, and the block C is then in the position J indicated by red ink lines on the Drawing, the same lever raises the 10 block from the receptacle in order to free it from the liquid it has drawn on to it, and is then in the position L also indicated by red ink lines, the block is then lowered and stopped by the piece F by means of which the slope of the block is regulated to the degree desired by changing the little peg G for one of the holes worked in the piece F to another, 15 the lever thus stopped supports the block during the blowing process. H is the counterweight intended to counterbalance the weight of the block; O is the paste laid on the interior concave surface of the block.

With regard to the compound the proportions herein-before mentioned are necessary to obtain a good result, because a greater proportion of 20 pitch stains the glass and renders the materials combustible, whilst a less proportion of the same prevents the charcoal from adhering to the metal and consequently causes the paste to disappear when the block is dipped in the liquid. The incense is not indispensable, but it gives a certain facility for turning the glass round in the block especially when 25 the operation is on a large scale.

The great thickness given to the bottom of the block is the means by which I prevent the warming of the liquid and the block, thus rendering it unnecessary to change the liquid during the day's work. The hollow shape of the back part of the block serves to make the glass 30 descend without returning as it now does, and thus the defects which are so often visible are avoided.

Numerous other advantages are derived from this combination of the apparatus and compound, amongst which are the constant washing of the block and consequently its being continually clean, the minimum 35 of labour and attention required in the working, the durability of the block, the wooden and metal ones used at present requiring to be

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constantly replaced, the security afforded against combustion and carbonization, and the less brittle character of the glass thus procured.

All the materials employed as yet for the purpose of preventing the contact of the glass with the wooden or metal block have always been  
5 subject to carbonize and thus produce defective glass, which this compound and apparatus overcomes as has been shewn.

This compound and arrangement and this manner of the immersion of the block in the liquid may be applied to wooden blocks, a much longer durability of the block being obtained by this application, the work also  
10 being facilitated.

The compound may also be employed in the expansion process, the wooden polisher employed for this purpose being covered with a layer of the compound either by means of a brush or a bath, it is thus able to resist the heat of the fire. A metal polisher can also be used by means  
15 of a layer of this compound.

Having thus described my Invention, and the manner of performing the same, what I claim and desire to secure by the said Letters Patent is,—

1st. The oscillating metal block working as and for the purpose  
20 described and represented in the Drawings.

2ond. The compound composed of charcoal, pitch, and incense combined and applied as described.

3rd. The oscillating arrangement of the block as described applied to wooden blocks.

25 4th. The application of the compound to the expansion process of the glass.

5th. The immersion of the block after every operation in a bath of beer or greasy water, as described and shewn in the Drawings.

In witness whereof, I, the said Jean Baptiste Fondu, have hereto  
30 set my hand and seal, this Fourth day of December, in the year of our Lord One thousand eight hundred and sixty-nine.

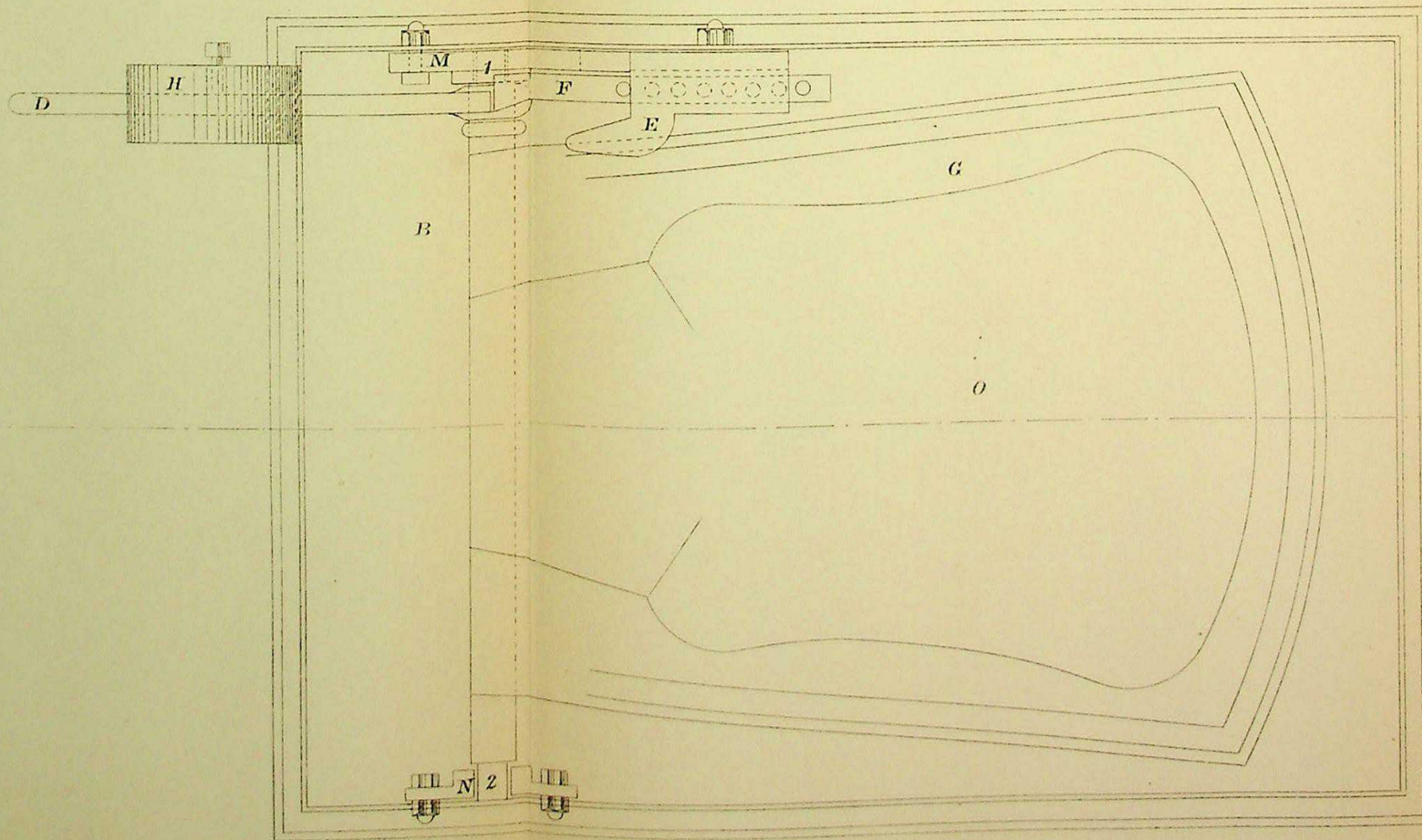
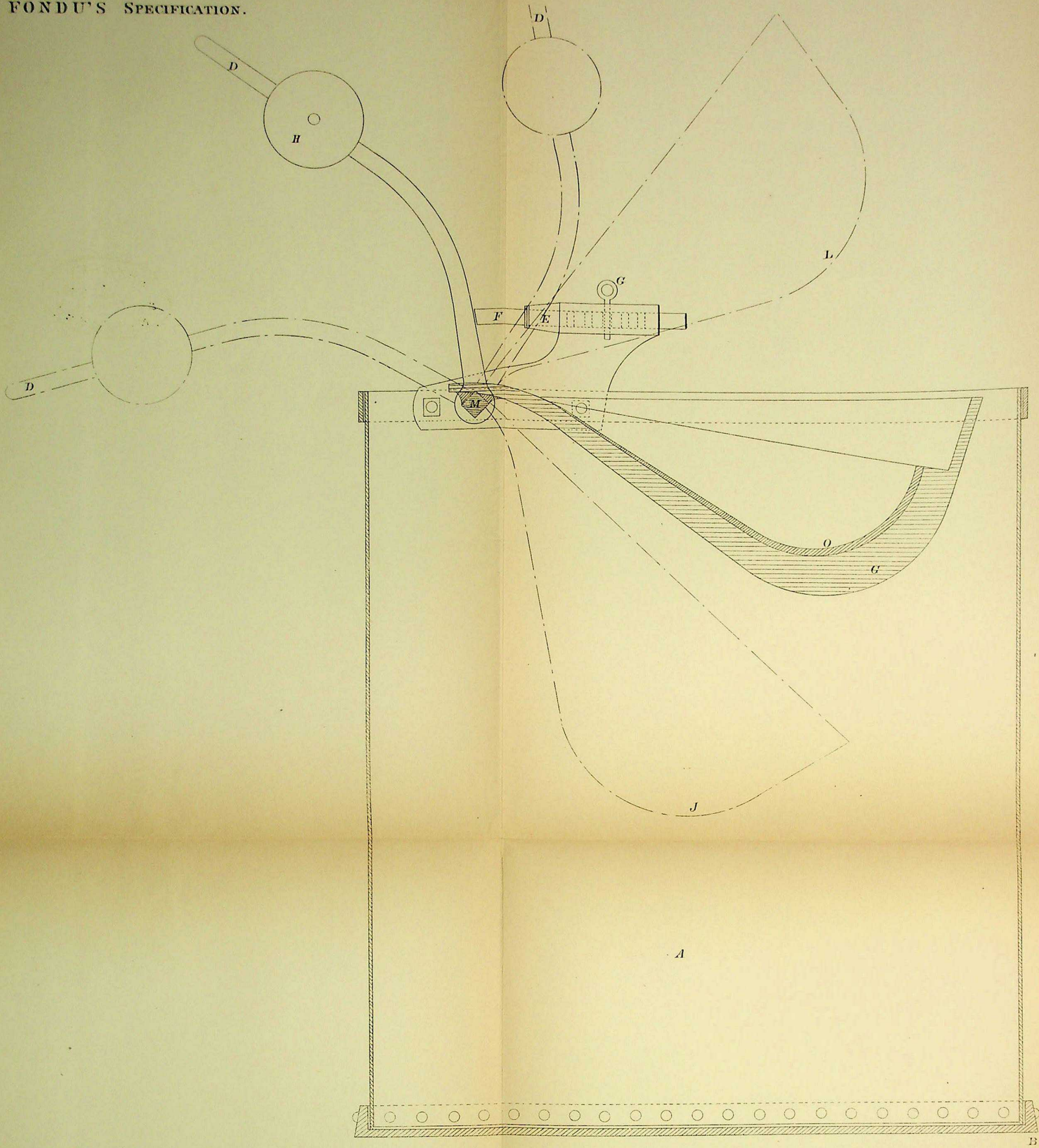
J. B<sup>TE</sup>. FONDU. (L.S.)

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LONDON:

Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,  
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A. D. 1869, JULY 19, N<sup>o</sup> 2182,  
FONDU'S SPECIFICATION.



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